User

Manual

KTD-125 / 125-24
KTD-125P / 125P-24
KTD-127 / 127W
PTZ Receivers

GE Interlogix
Kalatel

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For technical support before and after installation, call 800-469-1676.

Technical support is available 24 hours a day, 7 days a week.

Call:	**Tech Support**	800-469-1676 (6 A.M. – 5 P.M. PST Monday through Friday)
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	Main	800-343-3358 or 541-754-9133
Fax:	**Tech Support**	541-752-9096 (available 24 hours a day)
	Main	541-754-7162
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BEFORE YOU BEGIN

Read these instructions before installing or operating this product.

Note: This installation should be made by a qualified service person and should conform to local codes.

This manual provides installation and operation information. To use this document, you must have the following minimum qualifications:

- A basic knowledge of CCTV systems and components
- A basic knowledge of electrical wiring and low-voltage electrical hookups

Use this product only for the purpose for which it was designed.

Customer Support

For assistance in installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, contact Kalatel Technical Support:

GE Interlogix, Kalatel division
Call: 800-469-1676
Fax: 541-752-9096

Note: You should be at the equipment, ready with details before calling Technical Support.

Conventions Used in this Manual

Boldface or button icons highlight command entries. The following **WARNING, CAUTION,** and **Note** statements identify potential hazards:

* **WARNING:**
Improper use of this equipment can cause severe bodily injury or equipment damage.

** **CAUTION:**
Improper use of this equipment can cause equipment damage.

Note: Notes contain important information about a product or procedure.

* This symbol indicates electrical warnings and cautions.
** This symbol indicates general warnings and cautions.

1 INTRODUCTION

Use a KTD-125/127 PTZ receiver and a Kalatel keypad to interface with equipment from other manufacturers and simplify common security system functions. See Table 1 for an overview of KTD-125 and KTD-127 PTZ receiver features. See Figure 1 for a typical system diagram.

Table 1. Receiver descriptions and housing types

Receiver	Description	Housing Type
KTD-125	Drives a medium- or heavy-duty 115 VAC PTZ	Weatherproof
KTD-125-24	Drives a medium- or heavy-duty 24 VAC PTZ	Weatherproof
KTD-125P	The KTD-125 with a preset option that allows up to 10 programmed presets	Weatherproof
KTD-125P-24	The KTD-125-24 with a preset option that allows up to 10 programmed presets	Weatherproof
KTD-127	Drives a light-duty 24 VAC PTZ requiring less than one amp	Indoor only
KTD-127W	The KTD-127 in a weatherproof housing	Weatherproof

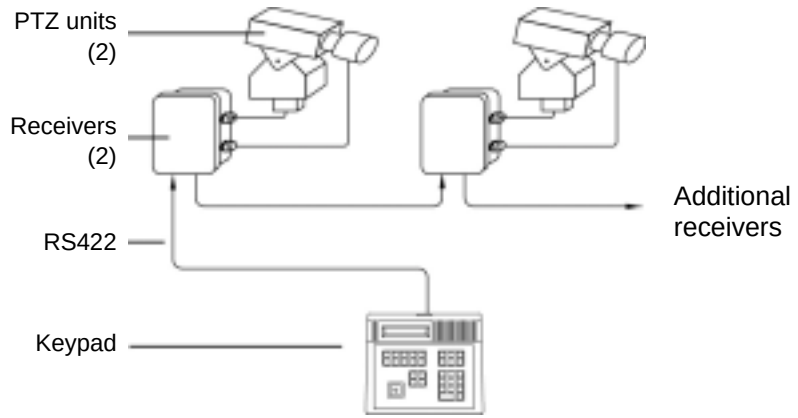


Figure 1. KTD-125/127 receiver typical system diagram

2 SETTING THE AUTOPAN JUMPER

Note: Make the autopan jumper selection before you supply power to the unit.

1) Determine whether or not your pan/tilt drive has an internal reversing switch. (See Appendix A, Determining the Type of Pan/Tilt Drive.)

2) Locate the autopan jumper. For KTD-125 units see Figure 2; for KTD-127 units see Figure 3.

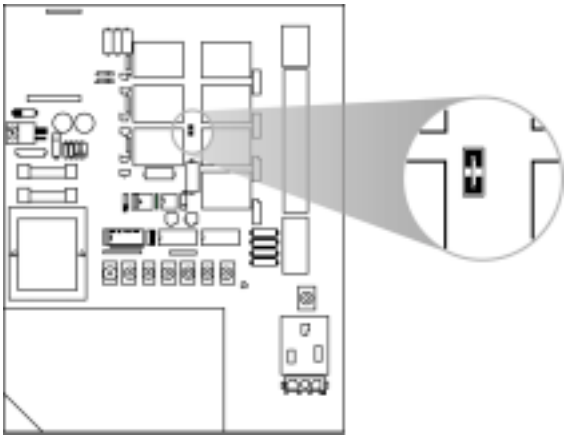


Figure 2. KTD-125 autopan jumper location

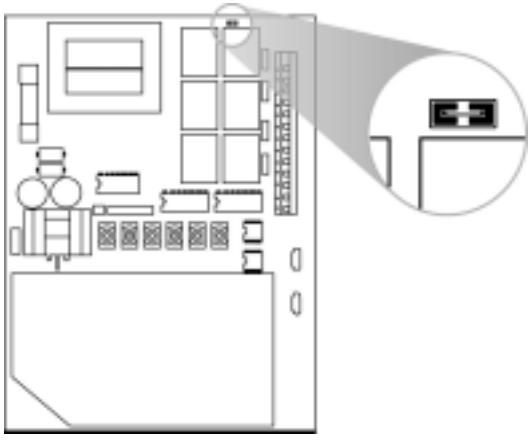


Figure 3. KTD-127 autopan jumper location

3) See Figure 4 to set the autopan jumper.

Connect for pan/tilt units **without an internal reversing switch**

Disconnect for pan/tilt **with an internal reversing switch**

Figure 4. Selecting the autopan jumper setting

Note: If the pan/tilt drive has an internal reversing switch, connect the pant/tilt drive's **AUTO** output to the receiver when making cable connections.

Note: If the pan/tilt units does not have an internal reversing switch, the left and right limit switches will determine the points where the unit will reverse during autopan.

3 INSTALLING KTD-125 UNITS

CAUTION:
Complete all instruction steps before supplying power to the unit.

3.1 MOUNTING THE UNIT

To mount the unit see Figure 5, Figure 6, and Figure 7 and perform the following.

1) Disconnect the power cable connector from the power input on the main relay board.

Note: In most cases, it is easier to mount the unit with the main relay board removed.

2) Remove the main relay board from the housing.

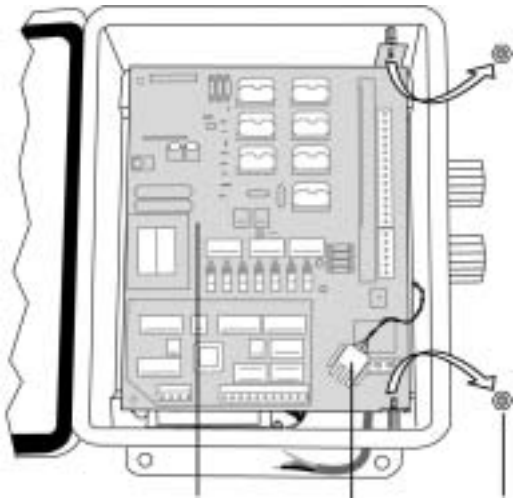


Figure 5. Removing the finger nuts (KTD-125P-24 shown)

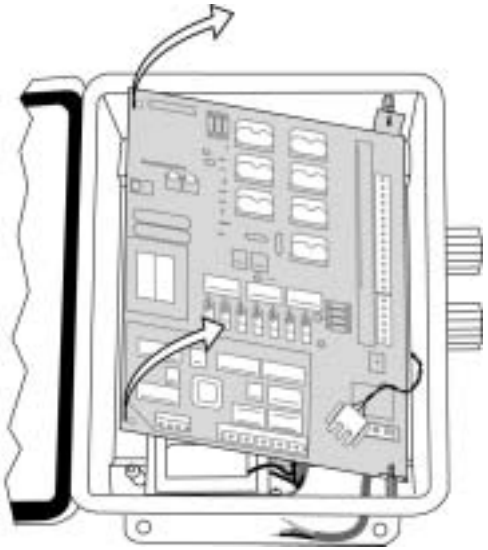


Figure 6. Pulling the main relay board away from the standoffs (KTD-125P-24 shown)

Note: You may need to bend the board slightly to remove it from the housing.

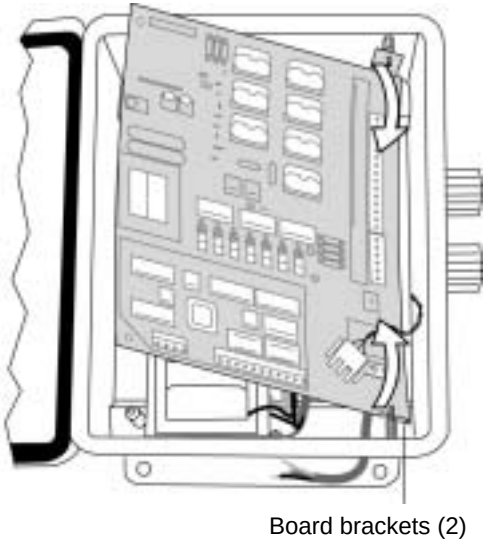


Figure 7. Pushing the board brackets inward to free the board from the housing. (KTD-125P-24 shown)

3) To mount the housing use installer-provided fasteners and the four mounting holes in the mounting flanges (Figure 8).

Note: Install the housing so that it is level and the door opens to the left.

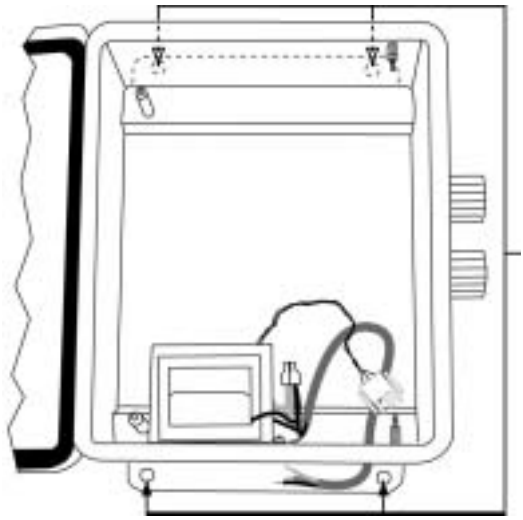


Figure 8. Holes in the housing's mounting flanges (KTD-125P-24 shown)

Note: Do not reinstall the main relay board until instructed to do so in section 6, Completing and Testing the Installation.

3.2 MAKING CABLE CONNECTIONS

For the following procedures, see Figure 9 for KTD-125/125P units and Figure 10 for KTD-125-24/125P-24 units.

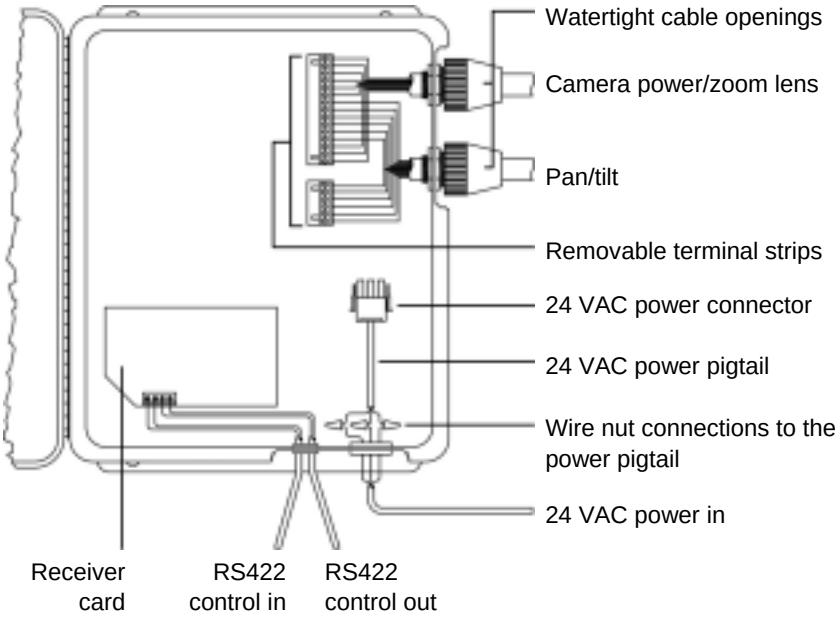


Figure 9. KTD-125/125P Cable routing

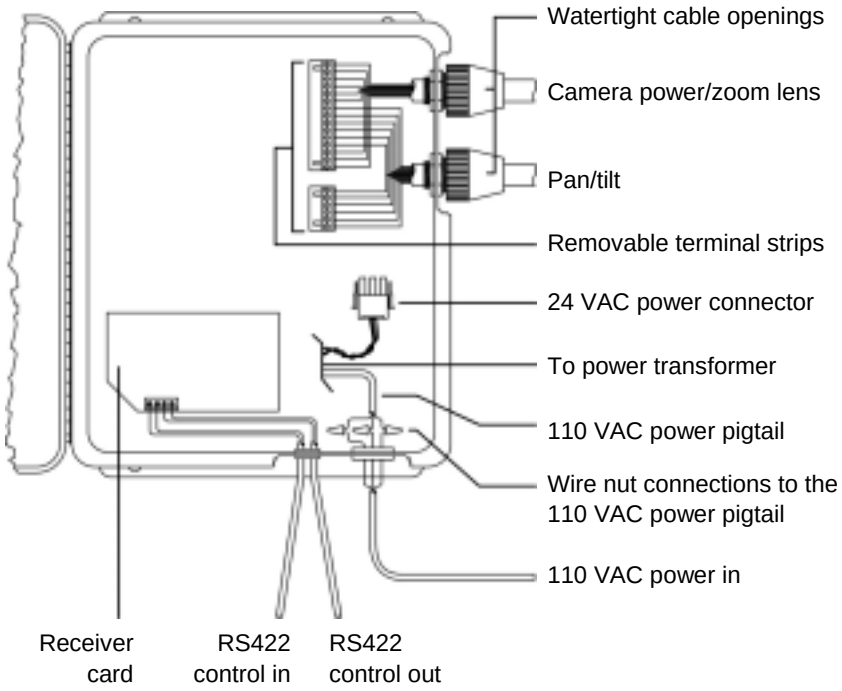


Figure 10. KTD-125-24/125P-24 cable routing

To prepare the cables for connection perform the following.

1) Route the cables into the housing.

2) Remove 6 inches of the outer casing of the camera/lens, pan/tilt, and power cables.

3) Tie a knot in the RS422 cable(s) six inches from the end on the inside of the housing to act as a strain relief.

4) Remove the outer casing from the end of the RS422 cable(s).

To make the cable connections perform the following.

CAUTION:
For the KTD-125-24 and KTD-125P-24 units, connect only 110 VAC input to the power cable pigtail.

CAUTION:
For the KTD-125 and KTD-125P units, connect only 24 VAC input to the power cable pigtail.

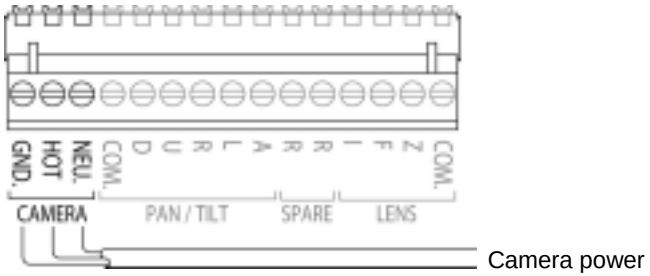
1) Use wire nuts to connect the power cable conductors to the power cable pigtail. (See Table 2.)

Table 2. Power cable pigtail connectors

Connector color		Description
Black	=	Hot
White	=	Neutral
Green	=	Ground

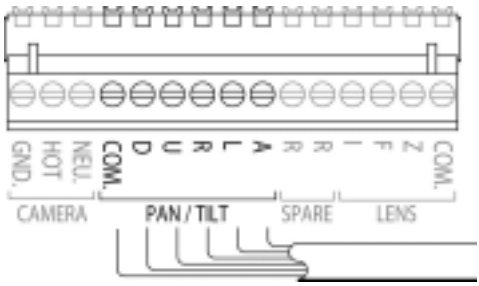
2) Remove the terminal strip(s) from the main relay board.

3) Make the remaining cable connections as shown in Figure 11 through Figure 14.



GND. = Ground **HOT** = Hot **NEU.** = Neutral

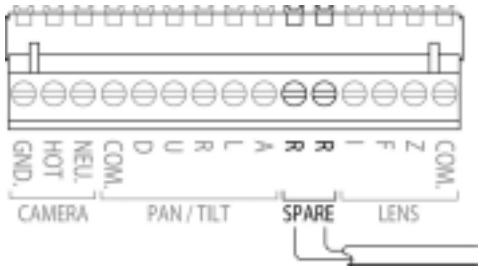
Figure 11. KTD-125 Camera Power Connections



COM. = Common **U** = Up **L** = Left

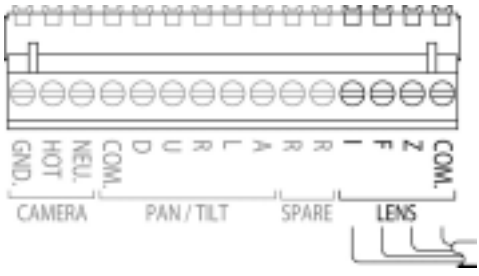
D = Down **R** = Right **A** = Auto

Figure 12. KTD-125 Pan/Tilt Connections



R = Relay Contact

Figure 13. KTD-125 Spare Relay Connections



I = Iris **F** = Focus **Z** = Zoom **COM.** = Common

Figure 14. KTD-125 Zoom Lens Connections

4) Remove the four-connection terminal strip from the receiver card on the main relay board.

Note: Observe polarity when you connect the RS422 control cables.

5) Connect the RS422 control cable(s) as shown in Figure 15.

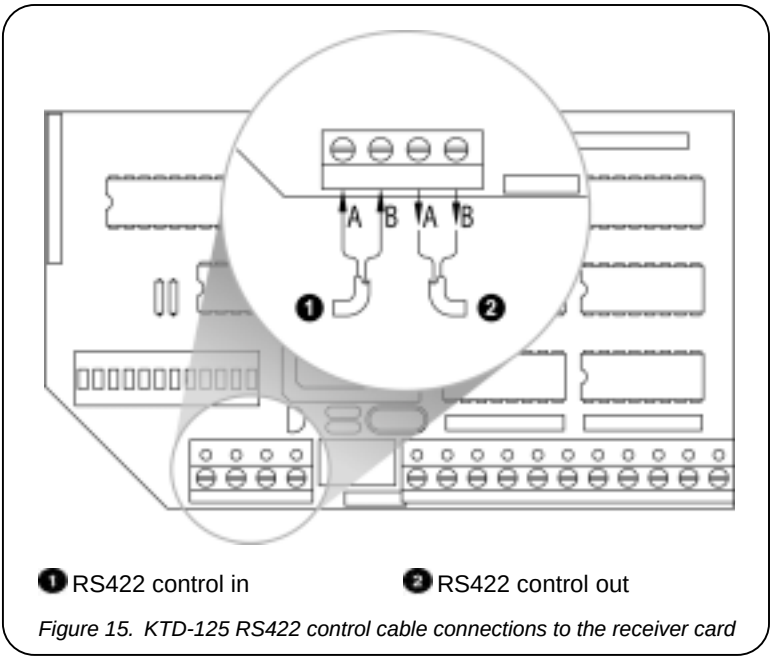


Figure 15. KTD-125 RS422 control cable connections to the receiver card

6) For the programming preset positions with the KTD-125P, see section 3.2.1, KTD-125P Preset Positioning.

For final installation steps see section 6, Completing and Testing the Installation (All Units).

3.2.1 KTD-125P PRESET POSITIONING

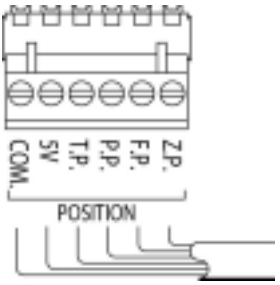
The KTD-125P/125P-24 receivers can find up to 10 preset positions if the camera lens and pan/tilt drive are equipped with feedback potentiometers. If you program the 10 positions from the controller keypad, you can find a maximum of eight through contact closures into the receiver's KTD-125C receiver card.

Note: You can also find the preset positions using the controller keypad keys, through contact closures into the KTD-463 Alarm Interface, and through commands issued from an external computer through the KTD-312 Interface Module.

The KTD-125P/125P-24 receivers include a relay that activates when one or more preset alarm contacts are closed. This allows switching of the alarmed site's video to the monitor screen while the camera moves to the alarmed preset position.

To find preset positions using contact closures into the receiver card see Figure 16 and Figure 17 and perform the following.

1) Connect the preset positioning input cable to the removable terminal strip from the main relay board.



Preset positioning input cable

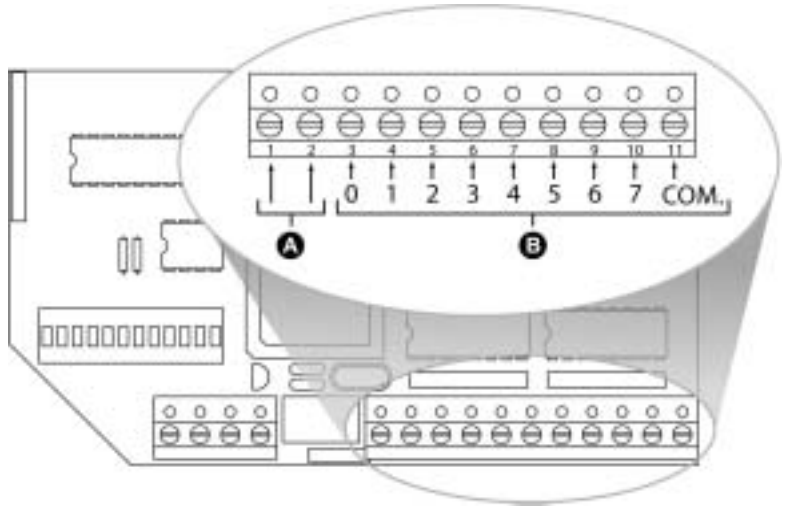
COM. = preset common **T.P.** = tilt position **F.P.** = focus position

5V = +5 Volts DC **P.P.** = pan position **Z.P.** = zoom position

Figure 16. Preset contact connections

2) Make the preset alarm contact connections to the preset connection terminal strip on the receiver card.

3) To connect the output relay to an alarm interface unit.



A Relay output

B Preset alarm input contacts

Figure 17. Preset and output relay contact connections

4 INSTALLING THE KTD-127

CAUTION:
Complete all instruction steps before supplying power to the unit.

4.1 MOUNTING THE UNIT

Note: In most cases, it is easier to mount the unit with the main relay board removed.

1) Remove the main relay board from the housing as shown in Figure 18 and Figure 19.

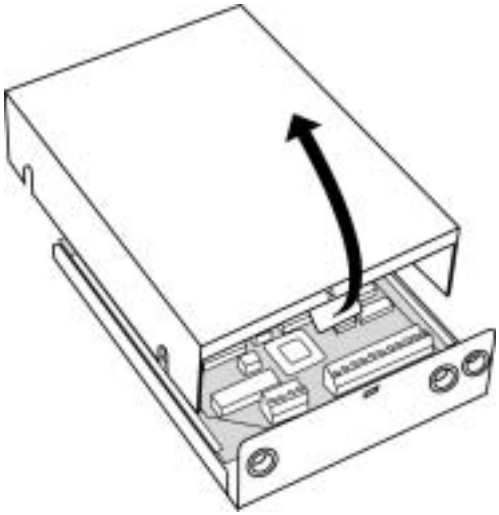


Figure 18. Removing the KTD-127 cover

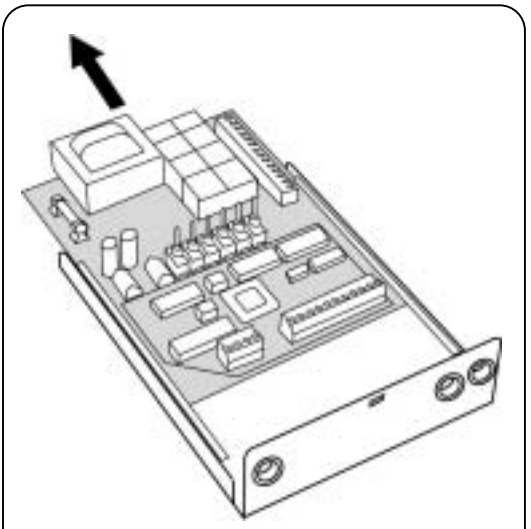


Figure 19. Sliding out the KTD-127 card

2) To mount the housing use the two mounting holes in the housing (Figure 20) and installer-provided fasteners.

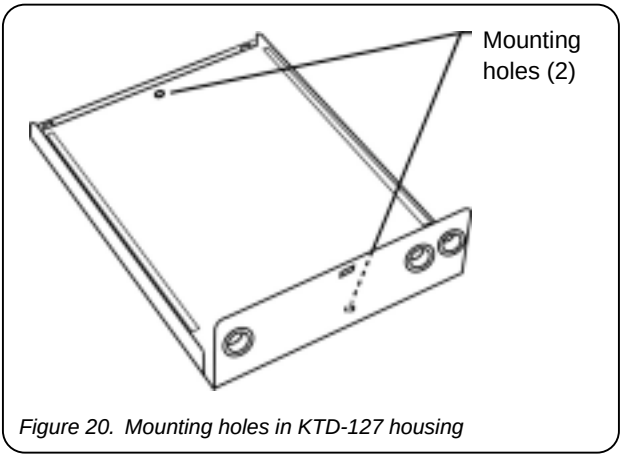


Figure 20. Mounting holes in KTD-127 housing

Note: Do not reinstall the main relay board until instructed to do so in section 6, Completing and Testing the Installation (All Units).

4.2 MAKING CABLE CONNECTIONS

See Figure 21 for the following procedures.

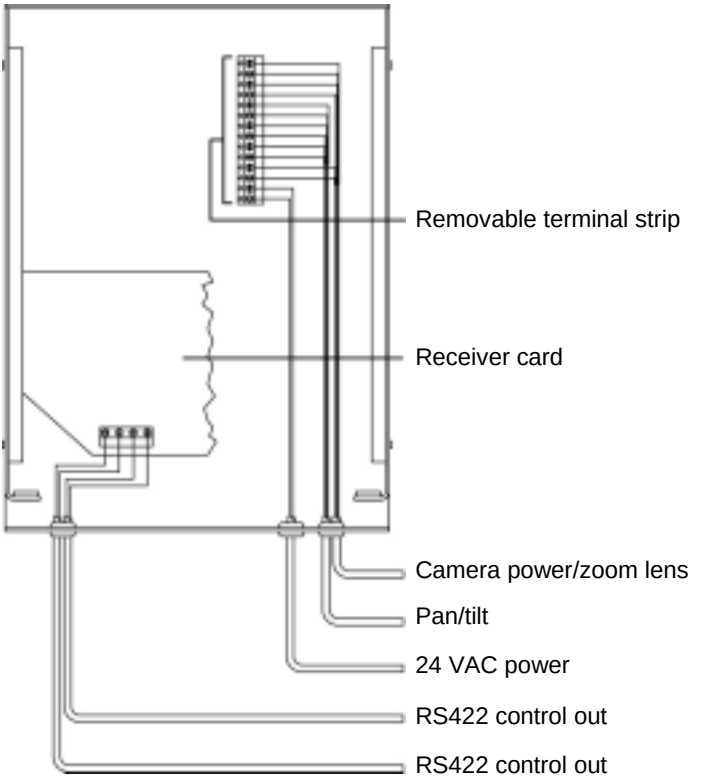


Figure 21. KTD-127 cable connections

To prepare the cables for connection perform the following.

1) Route the cables into the housing.

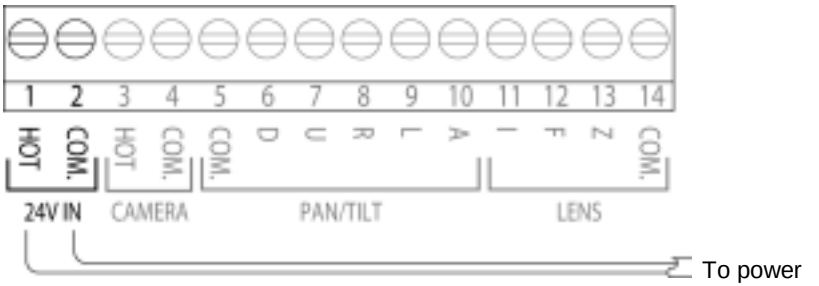
2) Remove 6 inches of the outer casing from the camera/lens, pan/tilt, and 24 VAC power cables.

3) Remove the outer casing from the end of the RS422 cable(s).

To make the cable connections perform the following.

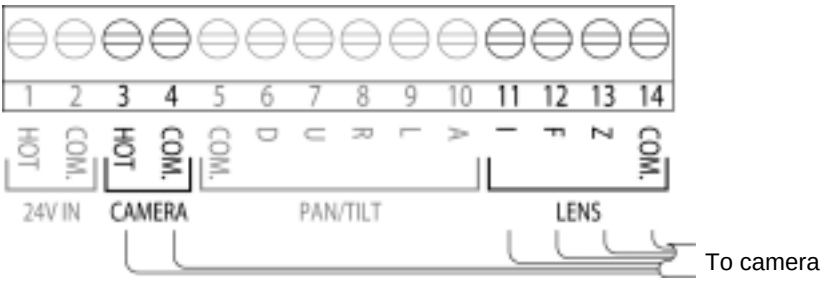
1) Remove the terminal strip from the main relay board.

2) Make connections as shown in Figure 22 through Figure 24.



1/HOT = Hot **2/COM.** = Common

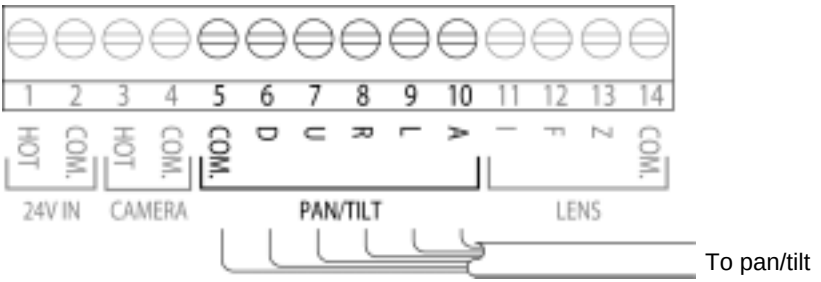
Figure 22. KTD-127 Terminal Strip Connections, Power



3 / HOT = Hot **11** / **I** = Iris **13** / **Z** = Zoom

4 / COM. = Common **12** / **F** = Focus **14** / **COM**. = Common

Figure 23. KTD-127 Terminal Strip Connections, Camera



5 / **COM.** = Common **7** / **U** = Up **9** / **L** = Left

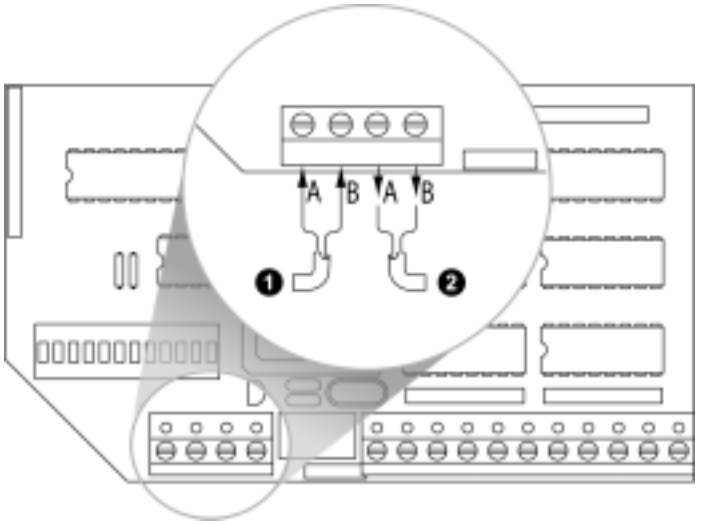
6 / **D** = Down **8** / **R** = Right **10** / **A** = Auto

Figure 24. KTD-127 Terminal Strip Connections, Pan/Tilt

3) Remove the four-connection terminal strip from the receiver card on the main relay board.

Note: Observe polarity when you connect the RS422 control cables

4) Connect the RS422 control cable(s) as shown in Figure 25.



1 RS422 control in 2 RS422 control out

Figure 25. KTD-127 RS422 control cable connections to the receiver card

For final installation steps see section 6, Completing and Testing the Installation (All Units).

5 INSTALLING THE KTD-127W

CAUTION:
Complete all instruction steps before supplying power to the unit.

5.1 MOUNTING THE UNIT

Note: In most cases, it is easier to mount the unit with the main relay board removed.

1) Remove the board from the housing as shown in Figure 26, Figure 27 and Figure 28.

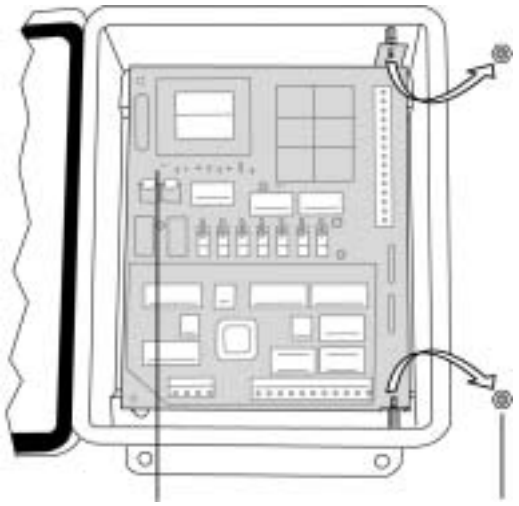


Figure 26. Removing the finger nuts

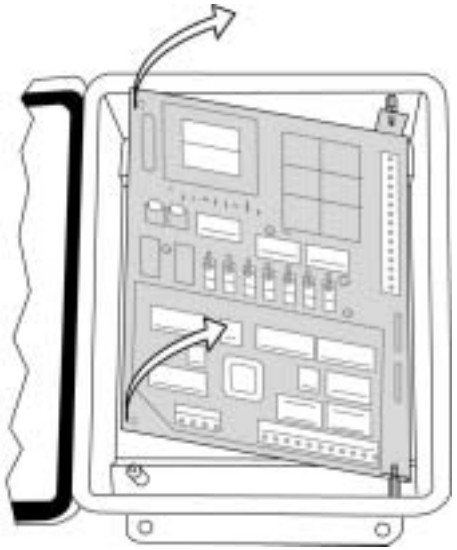


Figure 27. Pulling the board away from the standoffs

Note: You may need to bend the board slightly to remove it from the housing.

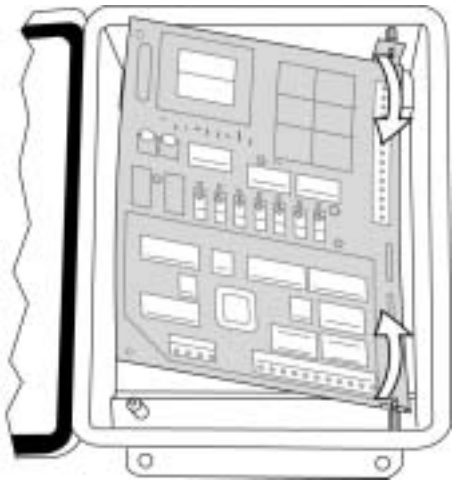


Figure 28. Pushing the board brackets inward to free the board from the housing.

2) To mount the housing use installer-provided fasteners and the four mounting holes in the mounting flanges (Figure 29).

Note: Install the housing so that it is level and the door opens to the left.

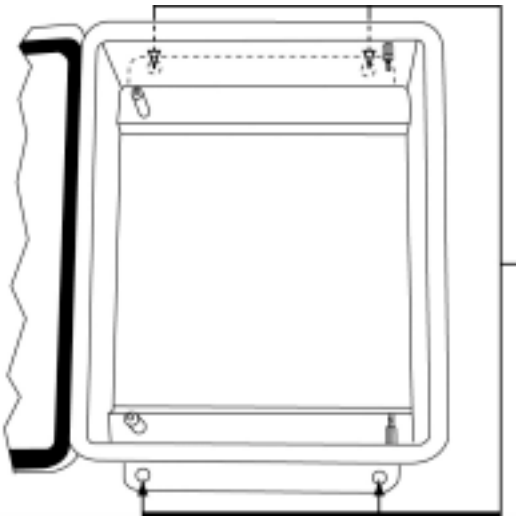


Figure 29. Holes in the housing's mounting flanges

Note: Do not reinstall the main relay board until instructed to do so in section 6, Completing and Testing the Installation (All Units).

5.2 MAKING CABLE CONNECTIONS

See Figure 30 for the following procedures.

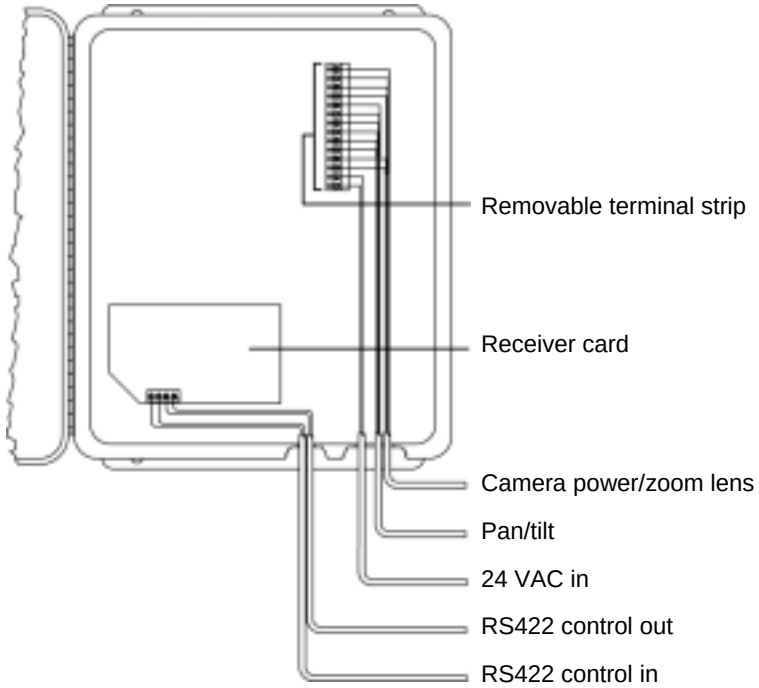


Figure 30. KTD-127W cable routing

To prepare the cables for connection perform the following.

1) Remove 6 inches of the outer casing of the camera/lens, pan/tilt, and power cables.

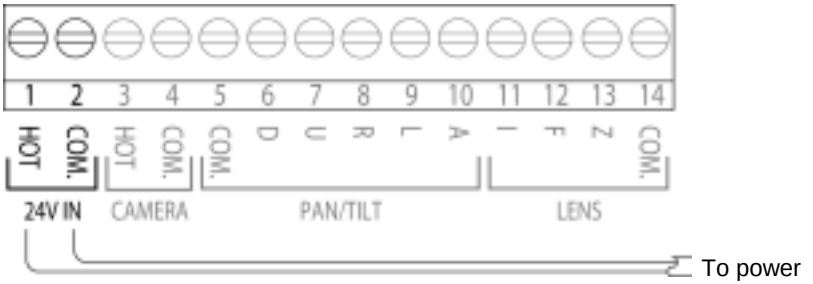
2) Tie a knot in the RS422 cable(s) six inches from the on the inside of the housing to act as a strain relief.

3) Remove the outer casing from the end of the RS422 cable(s).

To make the cable connections perform the following.

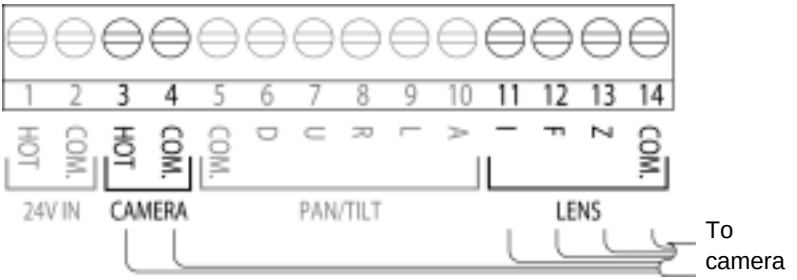
1) Remove the terminal strip from the main relay board.

2) Make the connections as shown in Figure 31 through Figure 33.



1/**HOT** = Hot **2**/**COM.** = Common

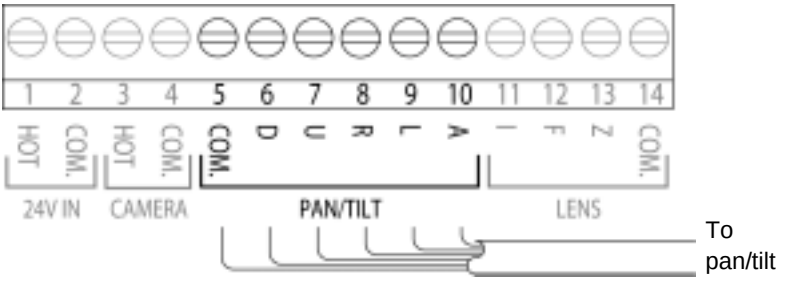
Figure 31. KTD-127W Terminal Strip Connections, Power



3 / **HOT** = Hot **11** / **I** = Iris **13** / **Z** = Zoom

4 / **COM**. = Common **12** / **F** = Focus **14** / **COM**. = Common

Figure 32. KTD-127W Terminal Strip Connections, Camera



5 / **COM.** = Common **7** / **U** = Up **9** / **L** = Left

6 / **D** = Down **8** / **R** = Right **10** / **A** = Auto

Figure 33. KTD-127W Terminal Strip Connections, Pan/Tilt

3) Remove the four-connection terminal strip from the receiver card on the main relay board.

Note: Observe polarity when you connect the RS422 control cables

4) Connect the RS422 control cable(s) as shown in Figure 34.

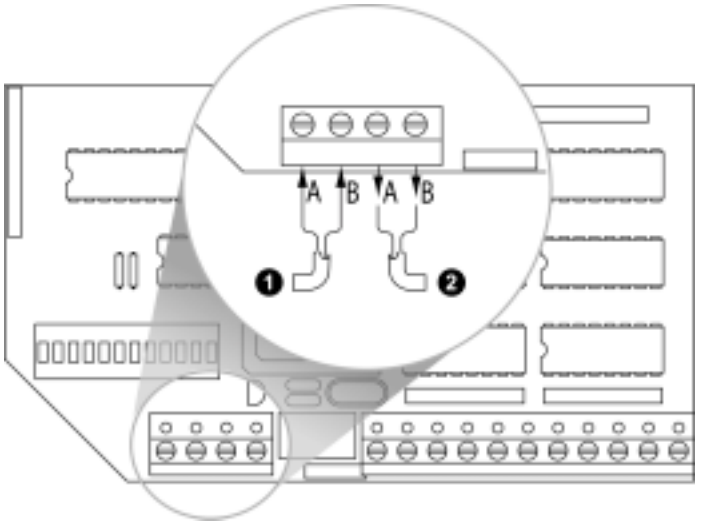


Figure 34. KTD-127W RS422 control cable connections to the receiver card

For final installation steps see section 6, Completing and Testing the Installation (All Units).

6 COMPLETING AND TESTING THE INSTALLATION (ALL UNITS)

To finalize the cable installation, perform the following.

1) Reinstall the main relay board into the housing.

2) Reinstall the removable terminal strips onto the main relay board and receiver card.

3) Reconnect the power cable connector to the power input on the main relay board.

4) If you have a unit with a weatherproof housing, tighten the watertight cable openings.

To test for proper installation, perform the following.

1) Check all connections.

2) Supply power to the unit.

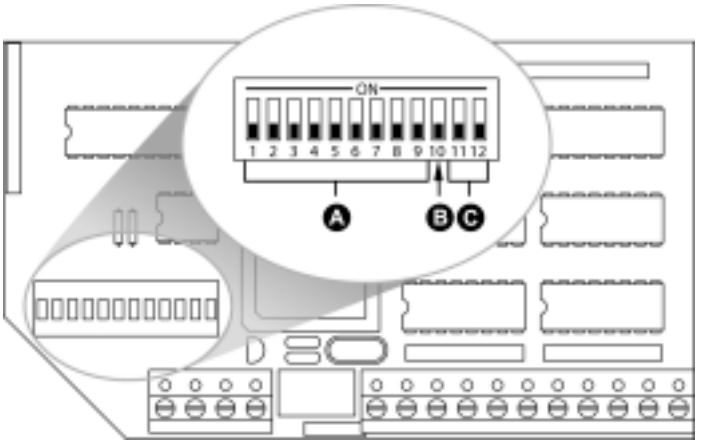
3) If you have a KTD-125 unit, confirm that the power switch on the main relay board is on.

4) Test for proper operation using the on-site toggle switches on the main relay board. (See Appendix B, Using On-Site Toggle Switches)

7 PROGRAMMING THE UNITS

The KTD-125 and KTD-127 PTZ receivers have several mode-of-operation choices that you must program before you operate the units. Typically, you would program the receiver with a Kalatel controller keypad.

To program the units manually using the DIP switches on the receiver card, perform the following.



A Site select B Programming C Termination

Figure 35. KTD-125, KTD-127, and KTD-127W DIP Switches

1) Disconnect power from the receiver.

2) Set DIP switch 10 to **ON** to put the receiver in programming mode.

3) Set the DIP switches for the desired mode of operation as shown in Table 3.

Note: When reentering programming mode, you must reprogram all mode-of-operation choices, even if you are only changing one.

Table 3. Setting DIP switches for the desired mode of operation

DIP Switch	Function	Setting
1	Zoom Polarity	OFF = Zoom in positive, zoom out negative ON = Zoom in negative, zoom out positive
2	Iris Polarity	OFF = Iris open positive, iris close negative ON = Iris open negative, iris close positive
3	Pan/Tilt Drive	OFF = Not DC motors ON = DC motors
4 and 5	Autopan	4 OFF + 5 OFF = Normal 4 OFF + 5 ON = Random pan 4 ON + 5 OFF = 50% duty cycle 4 ON + 5 ON = Disable autopan
6	Autopan on Power-Up	OFF = Yes ON = No
7	Zoom Lens Voltage	OFF = 12 VDC ON = 6 VDC
8	Invert Up and Down Tilt	OFF = Not inverted ON = Inverted

4) Supply power to the receiver.

5) Wait 5 seconds.

6) Set DIP switch 10 to the off position to place the receiver in normal mode.

To change mode-of-operation choices, repeat steps 1 through 6.

7.1 ASSIGNING A SITE ADDRESS

CAUTION:
Make sure the receiver is in normal operating mode before changing DIP switches 1 through 9 for site addressing.

To assign a site address perform the following.

Note: You can assign a site address while the unit has power.

1) Confirm that DIP switch 10 is in the off position or normal mode.

2) Determine which DIP switch values combine to equal the desired site number. (See Appendix D: Assigning DIP Switch Values.)

3) Set the DIP switches that correspond to those values to ON.

7.2 TERMINATION

If the RS422 cable does not loop out of the receiver to another unit, set DIP switches 11 and 12 to **ON** to terminate.

APPENDIX A. DETERMINING THE TYPE OF PAN/TILT DRIVE

- If the pan/tilt drive unit has an output labeled **AUTO**, it is has an internal reversing switch.
- If the pan/tilt drive unit does not have an output labeled **AUTO**, it does not have an internal reversing switch.

APPENDIX B. USING ON-SITE TOGGLE SWITCHES

See Figure 36 and Figure 36 for the location of the on-site toggle switches.

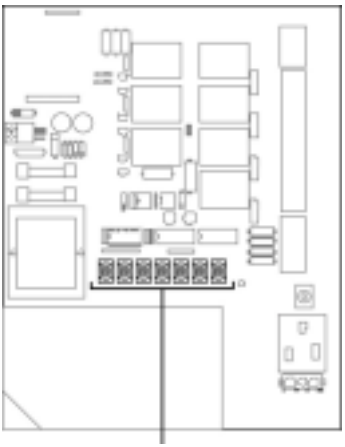


Figure 36. All KTD-125 units

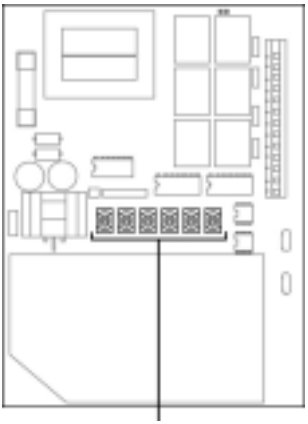


Figure 37. KTD-127 units

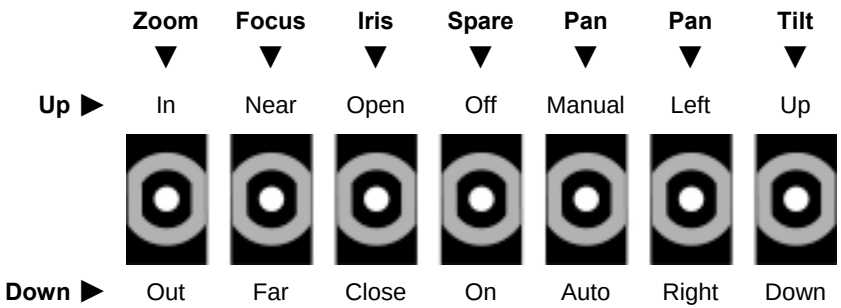


Figure 38. On-site toggle switch positions for all KTD-125 units

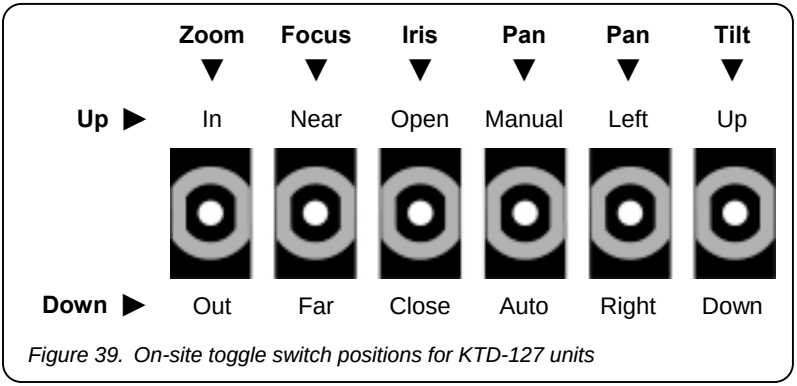


Figure 39. On-site toggle switch positions for KTD-127 units

APPENDIX C. AUXILIARY POWER OUTLET (KTD-125/125P)

Use the auxiliary power connection on the main relay board to power a test monitor on site or an auxiliary transformer for low voltage camera supplies.

APPENDIX D: ASSIGNING DIP SWITCH VALUES

One way to determine which switches to use is to subtract the highest possible switch value from the address you want, then subtract the highest possible switch value from that difference. Continue to subtract the highest possible switch value from the difference until you have zero. For example, if you want address 209:

Switch Address 209					
		Switch Value		**Difference**	**Switch On**
209	–	128	=	81	8
81	–	64	=	17	7
17	–	16	=	1	5
1	–	1	=	0	1

Therefore, for address 209, you would use switches 1 (1), 5 (16), 7 (64), and 8 (128). (See Figure A1)

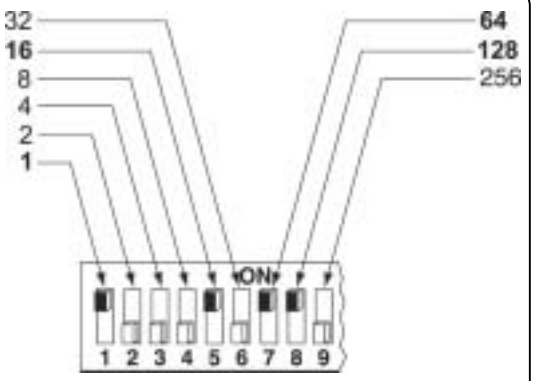


Figure A1. Zone address 209 (1 + 16 + 64 + 128)

TROUBLESHOOTING

Diagnostic check: Use the toggle switches on the main relay board to confirm that you have control of the camera from the receiver on.

- If **YES**, then check your RS422 connections from the keyboard to the receiver.
- If **NO**, then check your connections from the receiver to the camera/lens.

Diagnostic check: Meter across the RS422 cable connections at the keyboard and receiver card. Confirm that you have 1 – 2 VDC flowing.

- If **YES**, then check your connections from the receiver to the camera/lens.
- If **NO**, then check your RS422 connections from the keyboard to the receiver.

Problem	Probable Cause	Solution
No control of unit	Break in RS422 connection(s)	Check to see that both ends of the RS422 cables are connected. Confirm that the wires are stripped enough to make a good connection. Reattach the receiver card to the main relay board to make sure it correctly seated.
No control of lens	Break in camera/lens connection(s).	Use a voltage meter and the on-site toggles to check each camera/lens connection. If there is a problem, confirm that the wires are stripped enough to make a good connection.